Tejebuyin Basidiomycota
(unclassified)

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ABSTRACT. This paper is a fictional work that is centered around describing a fictional fungi (Tejebuyin Basidiomycota) that exists on a fictional island. The description of the island is as follows:

> This island is an extinct, very steep volcano. The vegetation on the island changes with the altitude of the volcano. Grasses grow at the base of the volcano. Further up the slope, the grasses give way to the low shrubs. Halfway up, the island becomes quite lush; tropical plants and trees are everywhere at this level, and they contain nuts and fruits that can be eaten. At the altitude, the island experiences frequent rain showers. There are two species of birds that inhabit the island, which prey upon smaller animals.

In this scientific paper we will be discussing key adaptations that the fungi has acquired through its prolonged exposure to the island that which it inhabits.

NOTE. All figures used in this paper are diagrams only representing the concepts demonstrated. Actual photos have not been acquired at this moment.

1. DEFINITION
    1. Extended Receptor Communication

       ExRC
    2. Behavioral Modification Agents

       BMA(s)
    3. Drought Resistance

       DR
    4. Underground Priority

       UP
    5. Bio-luminescent

       BioL
    6. Connected Evolution

       CE
    7. Parasitic

       Parasitic
    8. Passive-Invasive Behavior

       PIB

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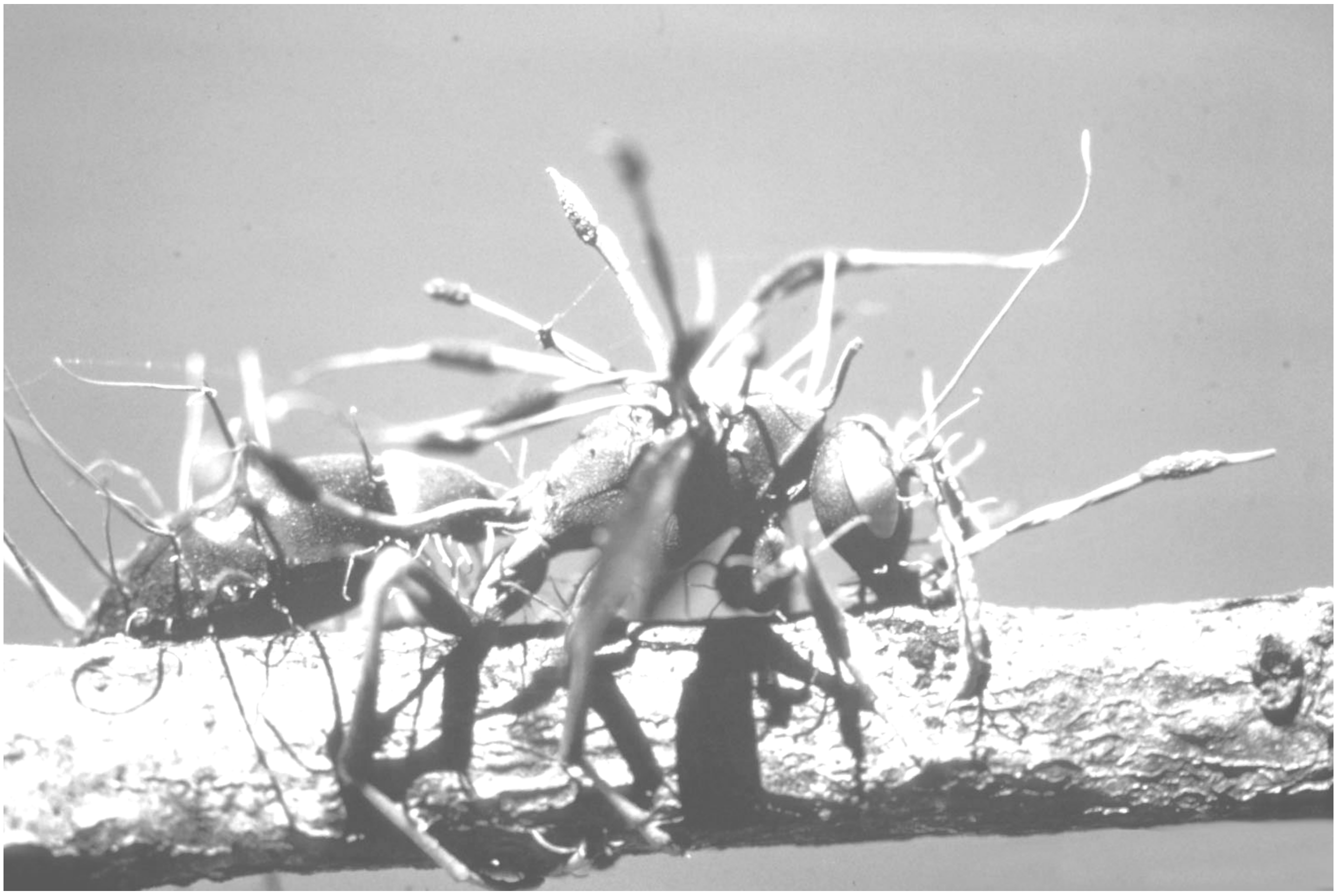
1. EXTENDED RECEPTOR COMMUNICATION

This species of fungi has a neural based network that can span over 25 kilometers. A feat such as this can only be achieved through the means of mycelium, a type of fungi root system. This allows the organism to transmit information about it's environment to other members of the population without the requirement to be in close proximity. This attribute has enabled the fungi to coordinate it's population dispersion consciously without the need to rely on natural forces as a means of control. An advancement such as this leads the fungi to be considered the most evolved organism on the island. See fig. 1 below for a representation of how the population dispersion of the fungi has helped it to keep the local population of tropical trees in check on the third topographic area of the island.

(Figure 1)

2. Behavioral Modification Agents

BMAs can be classified as substances that change the overall drive of an individuals thoughts or attitude. This fungi grows a set of BMAs contained within the above ground mushrooms. When these mushrooms are consumed by animals they will cause the animal to attempt to find prime areas with little or no fungi of the same species in the proximity in order to die and release the fungi into this new area. This attribute can be compared very similarly to the genus Cordyceps, which also controls its hosts as a way to transport and spread its own population, see fig. 2.



(Figure 2, Cordyceps on host ant)

3. Drought Resistance

Drought resistance is another common adaptation attributed to many species. This fungi specifically, has adapted with the drought resistant properties, it is thought of because of the high salt content of the surrounding water. After more research into this fungi, I have concluded that the drought resistant properties were obtained years before the species was discovered. As it stands, the trait should be considered vestigial, since the mycelium network that connects nearly the entire population, also acts as a tree-like root system, that can the population to share its resources. For example, it is estimated that over three fourths of the entire species population's water supply is produced by only a tenth of the population, located in the lush areas of the island that receive the most fresh water rainfall. This allows the population to venture away from its most comfortable environment. The species has ventured both up and down the island. The sub populations that form in these less than prime areas can be called colonies, who can only survive by maintaining a constant natural underground pipeline of nutrient transportation, between itself and the main population in the prime living areas.

4. Underground Priority

Tejebuyin Basidiomycota regularly grows underground. Although it only can be seen from the surface, over 70% of the total mass of the population is contained at least 8” below the surface of the ground. I hypothesize that this adaptation is a result of the species having increased reproduction rates when occupying subterranean areas. An example could include the following:

> Connected population of fungi exist underground. The population has 5 above ground ports to the above-ground world. One of these ports is killed. Instead of the organism being left crippled and ready to be unable to pass on its genes, the connected network underground is still supported by the other ports, and can quickly regrow a new port or ports to replace the one it has lost.

In this example we see how an underground species can better recover from population losses while a singular above ground species would recover slowly, even having the posibility of not recovering at all.

5. Bio-luminescent

The reason for light given off by the fungi is still unknown as of the release of this paper. Luminescence usually leads to a higher mortality rate, as predators have an easier time hunting down the species. One hypothesis states that the fungi glows as a way to purposefully attract predators. While this might seem contradictory to the usual belief, which it is, in this organism's case it could be seen as an improvement. Since the fungi uses BMAs as a method of population dispersion, it could make sense that the species would want give itself a better chance at being spread by increasing its likelihood to be eaten.

Studies done at Bradley University have discovered that when put in a closed environment, the fungi would attempt to expand to the limits of the area. If a majority of the population was scientifically “eaten” in a controlled manner, the fungi would no longer produce light through light producing chemical reactions. This might scientifically prove that the fungi is bio-luminescent for logical reasons.

Strengthening this hypothesis, the same lab observed that they acquired the same results, light production would cease, once the fungi expanded to fill its environment, as the need for expansion was unessecary.

6. Connected Evolution

One of the most perplexing discoveries connected with this species, would be the new concept of connected evolution. Nowhere else observed in nature, Tejebuyin Basidiomycota evolves in a near complete manner. The species seems to artificially conduct its own research on new mutations that appear within the population.

When a new mutation occurs, the entire mycelium network chooses as to whether it should be recycled or if it should be implemented as the new standard. If a mutation is chosen to be “recycled” then it will be denied the ability to reproduce, denied the right to pass on its mutation, eventually exiting the population. If the mutation is accepted, then the network will almost immediately pass on the genetic information along ExRC pathways, in order to have near the entire population updated with this new mutation in approximately 3 generations.

The speed of this process is astonishing, as it allows the species to evolve at extremely high rates, much higher than any other organism currently known to man. I hypothesize this to be the reason the fungi has adapted so well to its environment, which could only be approximately 3 centuries old, a short amount of time in the lifespan of a population.

7. Parasitic

Tejebuyin Basidiomycota can be classified as parasitic, due to its extraction of resources from neighboring organisms. When observed under lab conditions with the presence of other plants in nearby proximity, the fungi would no longer produce ports to the surface. It would instead attach to the nearby plants and consume a portion of their resources in order to sustain itself, and keep itself growing and expanding. The compelling difference between this species and many other parasitic species, was that the fungi virtually never killed its hosts when it was consuming resources. It allowed its host to continue living on. A hypothesis would state that this is a breakthrough of biology in the natural world, as it allows the fungi to maintain a consistent balance of energy, allowing it to grow, but not overconsume and kill off its hosts.

Judging by the size and attributes of the island it inhabits, it could overrun and kill off nearly every organism on the landmass in less than six months, if it overconsumed and no plants resistant to the fungi developed. This is because of the increased growth that has been observed in this strand.

8. Passive-Invasive Behavior

Behavioral adaptations are not usually recognized for the many different species of life. The fungi described in this paper would categrize under a behavior I would desribe as passive-invasive.

The species is passive, since it doesn't kill off hosts, and generally helps* to maintain a healthy ecosystem. It strengthens land with its expansive mycelium networks. It allows new plants to emerge on the soil it occupies since it only occupies the areas low enough, that they do not effect the plants growing above.

The species is invasive since it has an intense growth rate that allows it to fill its environment in short amounts of time. It also is specialized for occupying new environments that it might not be used to,due to its nutrient transport support discussed in section 3.

NOTE. This classification of a organism not from the animalia kingdom having a pyschological behavior attached to it, can be the start of a system for classifying behaviors of species from every kingdom, such as the fungi.

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